
तैयार मिश्रित रंग रोगन, समापन,
प्राइमिंग, पलस्तर, भारतीय मानक रंग
नं 361 फीका पत्थर और रंग नं 631
फीका ग्रे, सफेद धूमिल सफेद के
लिए विशिष्टि
(दूसरा पुनरीक्षण)

**Specification for Ready Mixed Paint,
Finishing, Priming, Plaster, to Indian
Standard Colour No. 361 Light Stone
and No. 631 Light Grey, White and
Off-White
(Second Revision)**

ICS 87.040

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली-110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Paints, Varnishes and Related Products Sectional Committee had been approved by the Chemical Division Council.

This standard was first published in 1950, based on the interim co-ordinated draft prepared by the Co-ordinating Subcommittee of the No. 5 Standing Committee on Specifications for Paints and Allied Stores of the General Headquarters, India (Army Headquarters). This was first revised in 1968. In that revision, a new shade IS Colour No. 631 light grey was added, use of imported materials like tung oil had been prevented and method of test for alkali resistance had been improved.

Revision of this Indian Standard has been taken up with a view to incorporate the limit of lead restriction in this standard. The technical committee responsible for formulation of this standard observed that in practice most of the paints are used for household/decorative as well as in industrial/commercial applications. Taking cognizance of the fact that lead exposure to human beings, particularly children in residential premises is injurious to health and has adverse impact on human health and safety, the Committee felt the need to introduce different level of lead restriction in all paints standards likely to be used for household and decorative purposes. Concurrently it was also decided to introduce lead restriction in a few of the industrial products, as far as possible, keeping in mind relevancy of lead restriction with respect to application condition and service life of the paint and wherever the product corresponding to a particular specification is of such composition that it would be easy to incorporate lead restriction without creating any negative impact.

This product is used as a sealer on plaster, brickwork, asbestos cement sheetings, etc. in house and buildings and also in industrial applications. Keeping this scope in view of exposure to human being when it is used for houses as well as in industrial applications and also to minimize the adverse impact on environment, the requirement of maximum permissible limit of lead has been kept as 1 000 ppm. Further, majority of consumers are not aware of the consequences of lead toxicity and its long term implications to human health. Therefore, in this revision, along with lead restriction, a suitable cautionary notice has been included in the marking clause. Reference has been given to various parts/sections of IS 101 for the requirements given in the standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SPECIFICATION FOR READY MIXED PAINT, FINISHING, PRIMING, PLASTER, TO INDIAN STANDARD COLOUR NO. 361 LIGHT STONE AND NO. 631 LIGHT GREY, WHITE AND OFF-WHITE (*Second Revision*)

1 SCOPE

This standard prescribes the requirements, and the methods of sampling and test for ready mixed paint, brushing, priming, plaster, to Indian Standard colour No. 361 light stone and No. 631 light grey, white and off-white. The material is used as a sealer on plaster, brickwork, asbestos cement sheetings, etc.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of and necessary adjuncts to this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 1303 shall apply.

4 REQUIREMENTS

4.1 Composition

The material shall be manufactured with suitable pigments, extenders and suitable medium, in such proportions as to satisfy the requirements of this standard.

4.2 Lead Restriction

The material shall not contain lead or compounds of lead or mixtures of both, as metallic lead more than 1 000 ppm, when tested for restriction from lead in accordance with IS 101 (Part 8/Sec 5).

4.3 The material shall also comply with the requirements given in Table 1.

**Table 1 Requirements For Ready Mixed Paint, Finishing, Priming, Plaster to Indian Standard Colour
No. 361 Light Stone, And No. 631 Light Grey, White And Off-White
(Clauses 4.3 and 7)**

Sl No.	Characteristics	Requirement	Method of Test Ref to IS 101	Annex
(1)	(2)	(3)	(4)	(5)
i)	Drying time, h, <i>Max</i>		(Part 3/Sec 1)	—
	a) surface dry	8		
	b) hard dry	24		
ii)	Finish	Smooth and matt to semi-gloss	(Part 3/Sec 4)	—
iii)	Consistency	Smooth and uniform	—	B
iv)	Mass, in kg/10 litre, (Part 1/Sec 7) <i>Min</i>	Within ± 3 percent of the approved sample	—	
v)	Colour	Close match to the specified colour as per IS 5 or approved sample	(Part 4/Sec 2)	—
vi)	Wet opacity, <i>Min</i> $\text{m}^2 / 10 \text{ litre}$	Between -10 percent and $+ 20$ percent of the approved sample or the value declared by the manufacturer	(Part 4/Sec 1)	—
vii)	Flash point	Not below 30°C	(Part 1/Sec 6)	—
viii)	Water content (if water is suspected to be present)	0.5	(Part 2/Sec 1)	—
ix)	Resistance to alkali	Shall Not be inferior to the approved sample	—	C
x)	Resistance to water	Shall Not be inferior to the approved sample	—	D
xi)	Keeping properties	Not less than one year from the date of manufacturing	(Part 6/Sec 2)	—

5 PACKING AND MARKING

5.1 Packing

The material shall be suitably packed as agreed to between the purchaser and the supplier. The packing is subject to the provisions of the law in force in the country at that time.

5.2 Marking

5.2.1 Each container shall be marked with the following:

- a) Name of the material and indication whether undercoating or finishing;
- b) Indication of the source of manufacture;
- c) Lead content (Maximum);
- d) Volume of the material;
- e) Batch number or lot number in code or otherwise;
- f) Month and year of manufacture;
- g) Colour/ shade of the material; and
- h) A cautionary note as below
 - 1) Keep out of reach of children.
 - 2) Dried film of this paint may be harmful if eaten or chewed.
 - 3) This product may be harmful if swallowed or inhaled.

5.2.2 *BIS Certification Marking* — The container may also be marked with the Standard Mark.

The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made there under. The details of conditions under which the license for the use of the Standard Mark may be granted to

manufacturers or producers maybe obtained from the Bureau of Indian Standards.

6 SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed in IS 101(Part 1/Sec 1).

6.2 Preparation of Test Samples

For Drying Time — Prepare asbestos cement panel (*see* IS 2096) of size 150 mm × 100 mm × 5 mm. All surface dust shall be removed before application of the paint. Apply by brushing uniformly one coat of the material to give a evenly coated wet film on the panel. Allow the panel to air dry in a well-ventilated room in a horizontal position and note the drying time. During drying, protect the film from direct sunlight. Follow other conditions as prescribed in IS 101 (Part 3/Sec 1). Prepared test panel then subjected to the test as specified in IS 101(Part 3/Sec 1) as soon as possible.

6.3 Criteria for Conformity

A lot shall be declared as conforming to the requirements of this standard if the test results of the composite sample satisfy the requirements prescribed under 4.

7 TEST METHODS

7.1 Tests shall be conducted as prescribed in 4.1 to 4.2 and the test methods referred in col 4 and 5 of Table 1.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
5 : 2007	Colours for ready mixed paints and enamels (<i>sixth revision</i>)	(Sec 1) : 1988	Water content (<i>third revision</i>)
44 : 1991	Iron oxide pigments for paints — Specification (<i>second revision</i>)	(Part 3)	Tests on paint film formation,
63 : 2006	Whiting for paint and putty (<i>third revision</i>)	(Sec 1) : 1986	Drying time (<i>third revision</i>)
101	Methods of sampling and test for paints, varnishes and related products:	(Sec 4) : 1987	Finish (<i>third revision</i>)
(Part 1)	Test on liquid paints (general and physical)	(Part 4)	Optical tests on paint films
(Sec 1) : 1986	Sampling (<i>fourth revision</i>)	(Sec 1) : 1988	Wet opacity (<i>third revision</i>)
(Sec 3) : 1986	Preparation of panels (<i>third revision</i>)	(Sec 2) : 1989	Colour (<i>third revision</i>)
(Sec 6) : 1987	Flash point (<i>third revision</i>)	(Part 6)	Durability tests on paint films
(Sec 7) : 1987	Mass per 10 litre (<i>third revision</i>)	(Sec 2) : 1989	Keeping properties (<i>third revision</i>)
(Part 2)	Test on liquid paints (Chemical examination)	(Part 7)	Environmental tests on paint films
		(Sec 1) : 1989	Resistance to water (<i>third revision</i>)
		(Part 8)	Tests for pigments and other solids
		(Sec 5) : 1993	Lead Restriction test (<i>third revision</i>)
		411: 1991	Specification for titanium dioxide for paints (<i>third revision</i>).
		1070 : 1992	Reagent grade water (<i>third revision</i>)
		1303: 1983	Glossary of terms relating to paints (<i>second revision</i>)
		2096 : 1992	Specification for asbestos cement flat sheets (<i>first revision</i>)

ANNEX B

[Table 1, Sl No. (iii)]

CONSISTENCY**B-1 APPARATUS****B-1.1 Paint brush****B-1.2 Panels**

Prepare asbestos cement panel (*see* IS 2096) of size 150 mm × 100 mm × 5 mm.

B-2 PROCEDURE

B-2.1 All surface dust shall be removed before application of the paint. The material shall then be applied on the surface of the panel by brushing.

B- 2.2 Observations

The coating of the paint sample so applied on the panel shall be smooth and uniform.

ANNEX C

[Table 1, Sl No. (ix)]

DETERMINATION OF RESISTANCE TO ALKALI

C-1 GENERAL

C-1.1 Outline of the method

Asbestos cement test panels are soaked in alkali solution and dried. These are painted with the material and alkali sensitive distemper. This panel with the painted surface upward and another similarly prepared using an approved sample are allowed to remain in contact with wet blotting paper for the prescribed time at room temperature and their surfaces compared for appearance of blue spots and extent of general deterioration of the paint film.

C-2 MATERIALS

C-2.1 Test Panels

Test panels are of asbestos cement sheet (*see* IS 2096) and size 150 mm × 100 mm × 5 mm.

C-2.1.1 Preparation of the Panel for Test — Completely immerse panels of asbestos cement flat sheet, having a water absorption of not less than 20 percent, in a 5 percent solution of sodium hydroxide for 24 h at room temperature. Withdraw the panels and allow to drain for 15 minutes at room temperature and then stove for 4 h at a temperature of 150°C. Allow the panel to stand for 24 h at room temperature. Apply three coats of the material on one of the prepared panels by brushing to give a dry film mass of 22 to 27 g/m² in accordance with 101 (Part 3/Sec 4). Allow the panel to stand for 96 h at room temperature. Subsequently apply a coat of alkali sensitive distemper (*see* C-2.2.2) uniformly by brushing to the centre of the paint film, covering approximately a surface of 75 mm × 50 mm and allow to dry for 1 hour at room temperature.

C-2.2 Reagents

C-2.2.1 Sodium Hydroxide Solution — 5 percent (w/v).

C-2.2.2 Alkali Sensitive Distemper — Shall be prepared with the following ingredients:

- | | |
|---|--------|
| a) Titanium dioxide (conforming to IS 411) | 15 g |
| b) Yellow ochre (conforming to IS 44) | 2 g |
| c) Whiting (conforming to IS 63) | 45 g |
| d) Bromothymol blue (solution prepared in 50 percent ethyl alcohol) | 0.25 g |
| e) Glue, 10 percent solution in water | 15 ml |

C-3 PROCEDURE

C-3.1 Place the panel with the paint film upward and six sheets of wet blotting paper, placed on a glass plate, supported on two beakers filled with water. The ends of the blotting papers are so placed that they dip into the water in the beakers at either end of the glass plate. Leave the panel in contact with wet blotting paper for 8 h at room temperature examining the surface covered by the alkali sensitive distemper every 30 minutes. Record the time of appearance of any signs of transmission alkali through the paint film, as indicated by the appearance of blue spots on the surface of the distemper. Conduct a control test in the same manner and at the time on the approved sample.

C-3.2 Report the time taken for the appearance of blue spots in the panel painted with the material and compare with the result of test with the approved sample. Compare the condition of softening, blistering or cracking of the panel treated with the material and then treated with the approved sample.

C-4 RESULTS

The material shall be deemed to have passed the test if it is found to be not inferior to that of the approved sample in respect of softening, blistering, cracking, or change of colour of the alkali sensitive distemper.

ANNEX D

[Table 1, Sl No. (x)]

TEST FOR RESISTANCE TO WATER

D-1 GENERAL**D-1.1 Outline of the method**

This method gives an indication of the results likely to be obtained when painted articles are stored under conditions where prolonged condensation may be produced but not an extremely corrosive atmosphere.

D-2 MATERIALS**D-2.1 Test Panels**

Glass panel of size 150 mm × 50 mm.

D-2.1.1 Preparation of the Panel for Test — Prepare the panel as prescribed in 5 of IS 101(Part 1/Sec 3).

D-3 PROCEDURE

Apply a coat of the material uniformly on glass panels

as prepared **D-2.1** by brushing to give a dry film mass of 22 to 27 g/m² in accordance with 101 (Part 3/Sec 4). Allow the panel to air dry in a horizontal position for 48 h at room temperature. Then follow the procedure as prescribed in 4.1.1, 4.2 and 5 of IS 101 (Part 7/Sec 1). Immerse the panel in the tank at room temperature for 48 h. Remove the panels from water and examine it after 4 h.

D-4 RESULTS

The paint shall be deemed to have passed the test if the painted panel shall be free from blisters, peeling or flaking and undue change in colour. There shall not be loss of adhesion, rust staining, change of colour, embrittlement or other characteristics against the approved sample.

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Amendments Issued Since Publication

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones : 2323 0131, 2323 3375, 2323 9402

Website: www.bis.org.in

Regional Offices:

	Telephones
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 7617 2323 3841
Eastern : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, CHANDIGARH 160019	{ 26 50206 265 0290
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

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